

No Cost Difference Between Single or Dual Implants for Distal Femur Fractures in the Perioperative Period

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Purpose: This study uses a value-driven outcome model to assess the cost-effectiveness of single implants vs dual implants used in the fixation of distal femur fractures.

Methods: A retrospective review of all distal femur fractures (DFFs) at a Level I trauma center was done including cases with cost data and follow-up >6 months. DFFs were divided into groups fixed by an intramedullary nail (IMN), lateral plate (LP), or dual construct (DC) (IMN and plate or dual plating). Cost data included all costs associated with initial hospitalization as well as subsequent admissions associated with the injury including implant, facility, and operative costs. Actual cost data were analyzed via an inverse Gaussian regression model. Cost data were reported as a log link value and presented as a percentage difference.

Results: Of 296 cases, 123 were treated by IMN, 133 by LP, and 40 by DC. There were no differences between treatment groups in age, gender, race, body mass index (BMI), Charlson comorbidity index, ISS, or smoking. DC DFFs tended to be AO Type C or periprosthetic fractures, 28% and 38%, respectively. DC had a higher total cost at the time of surgery and at 6 months; DC was 22% more expensive than IMN and 16% more expensive than LP. This was driven by implant cost, as DC was 41% more expensive than IMN and 31% more expensive than LP. When controlling for age, BMI, AO fracture severity, and ISS, there was no difference in total cost across fixation types.

Conclusion: DC costs are not significantly different despite their high initial implant costs and placement in more severe fracture patterns.